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(71) Applicant

**Victor Leonard Wise,  
5 St Crispin Way, Raunds, Wellingborough,  
Northants NN9 6SD**

(72) Inventor

**Victor Leonard Wise**

(74) Agent and/or Address for Service

**A. A. Thornton & Co, Northumberland House, 303-306 High  
Holborn, London WC1V 7LE**

(51) INTCL<sup>4</sup>

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(56) Documents cited

**GB A 2143138**

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(58) Field of search

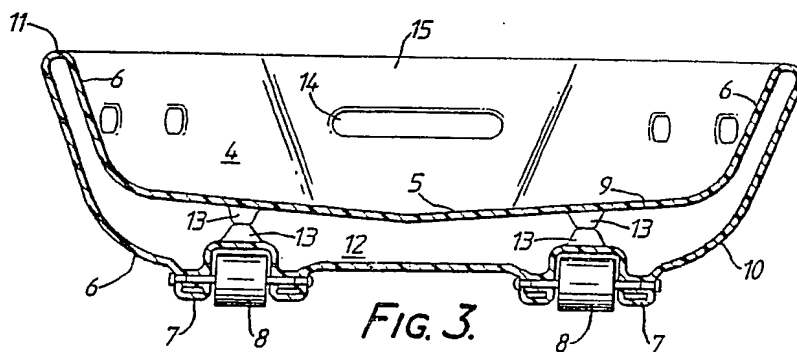
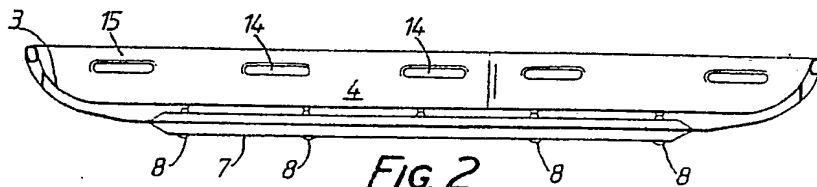
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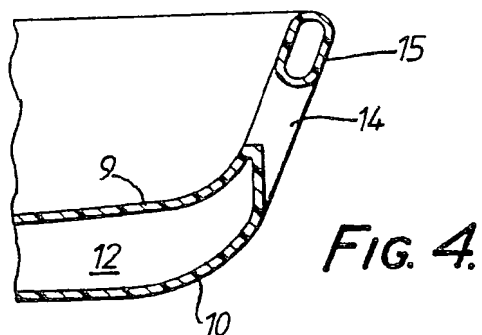
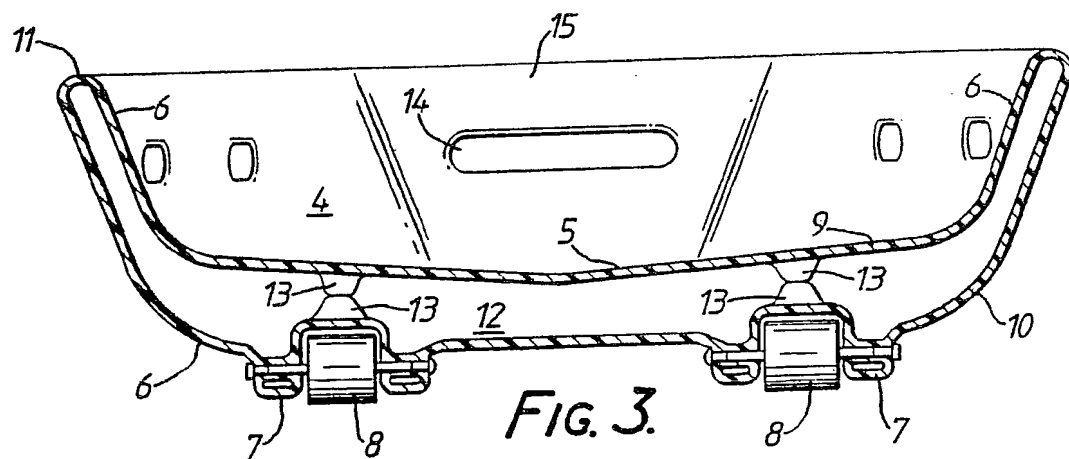
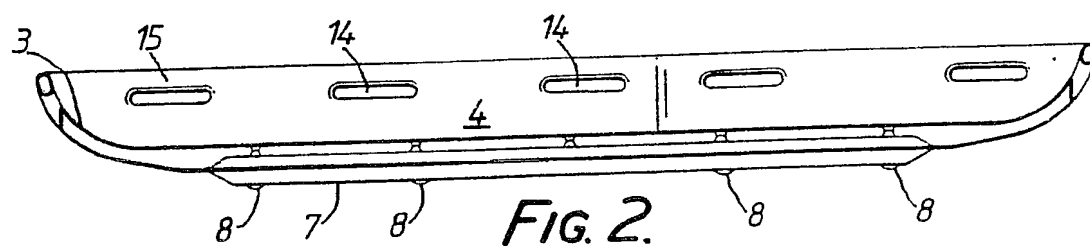
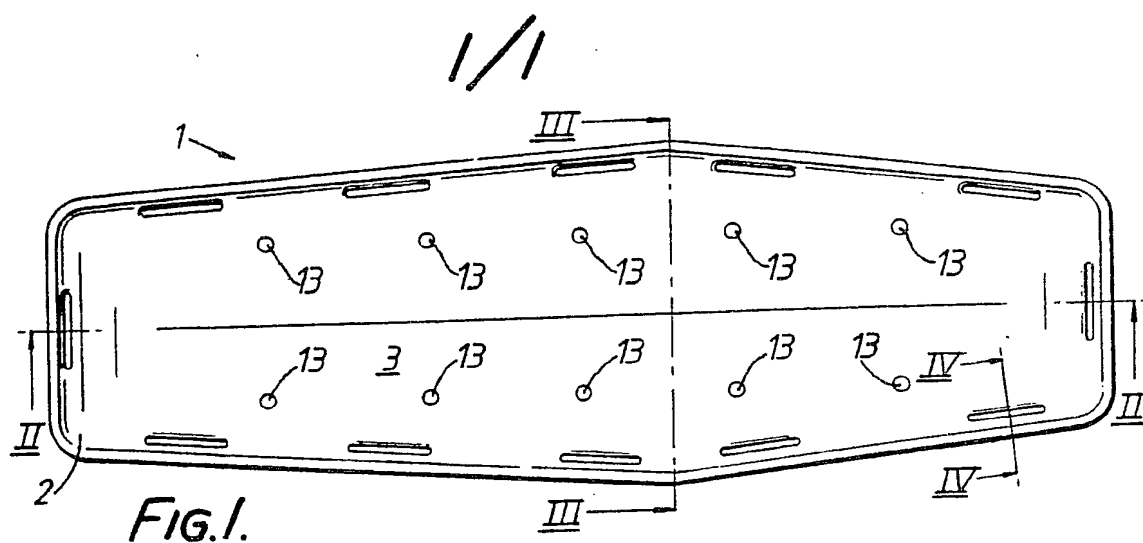
**Selected US specifications from IPC sub-class A61G**

(54) **Stretcher**

(57) The stretcher, particularly suited to emergency evacuation of hospitals, comprises a moulded plastics body 2 having a recess 4 into which a patient may be loaded and a lower surface provided with skids 7 and wheels 8. Openings 14 around the periphery of the stretcher define grab handles 15 which may be used to drag or carry the stretcher and to secure straps for retaining a patient in position.

The body may be comprised of two shells 9 and 10 and sealed so that the hollow therebetween aids buoyancy of the stretcher.





## SPECIFICATION

## Stretcher

5 This invention relates to a stretcher, and in the preferred embodiment provides a strong, resilient, and protective stretcher suitable for use in the emergency evacuation of semi-mobile and non-ambulant patients.

10 The design of stretchers has, in the past, been dominated by the supposed requirements that the stretcher must be capable of being folded for storage purposes. Stretchers designed in accordance with this requirement have a number of deficiencies

15 which render them particularly unsuitable for the emergency evacuation of hospitals, nursing homes, and the like. In particular, they offer very limited protection to patients, they must be lifted rather than dragged over floors and obstructions, and they are replete with projecting parts which are liable to catch on furniture, soft furnishings, clothing, and the like.

According to one aspect of the present invention there is provided a stretcher comprising a plastics body the upper surface of which is dished to form a patient receiving recess, and the lower surface of which is provided with ground engaging means on which the stretcher loaded with a patient may be dragged along the ground, the body being sufficiently rigid to protect the patient from contact with any object struck by the stretcher as it is being dragged or carried, and being provided with openings whereby peripheral portions of the body form grab handles by means of which the stretcher may be lifted, carried, or dragged.

35 The preferred embodiment of the invention offers substantial advantages over conventional folding stretchers especially for use in the emergency evacuation of hospitals, nursing homes, and similar establishments. The dished upper surface of the body forms a patient receiving recess into which a patient may quickly be lowered and which offers protection at the head, feet and sides of the patient against accidental sliding off the stretcher and against accidental contact with obstructions. The patient may readily be secured within the recess simply by passing straps across the top of the patient and securing these to convenient means, for example the grab handles. The grab handles themselves, being formed by part of the plastics body, do not protrude from the plastics body and are therefore not liable to catch on furniture, parts of the building, or other obstructions. Indeed, the entire periphery of the stretcher can be smooth and free from projections, thereby reducing to a minimum the possibility that the stretcher will catch on an obstruction.

Since the grab handles are formed by integral portions of the body, a relatively large number of grab handles can be formed around the periphery of the body to facilitate lifting and dragging of the stretcher. The ground engaging means enable the stretcher to be dragged in a loaded condition along the ground, the rigid body of the stretcher providing protection to the patient against direct or indirect contact with any object struck by the stretcher, or over which the stretcher is dragged. To facilitate dragging of the stret-

cher drag lines are preferably attached to both ends of the stretcher. The facility to drag a load stretcher along the ground can be of considerable benefit in evacuating a smoke filled area.

70 In the preferred embodiment of the invention, the body is formed by two spaced apart skins having a trapped air space therebetween. This not only improves the strength of the stretcher but provides a measure of cushioning to the patient and, if desired, the air space can be utilized to provide buoyancy for the stretcher.

If desired, the stretcher can be provided with means for securing an arm to carry a drip-feed assembly.

80 Whilst primarily intended for the emergency evacuation of hospitals and similar establishments, it will be appreciated that the stretcher may be of general utility. Preferably, the dished shape of the stretcher will enable stretchers to be nested one within another for storage purposes.

The invention will be better understood from the following description of a preferred embodiment thereof, given by way of example only, reference being had to the accompanying drawing wherein:

90 *Figure 1* is a plan view of a preferred embodiment of the invention;

*Figure 2* is a section along the line II-II of *Figure 1*;

*Figure 3* is a cross-section on an enlarged scale along the line III-III of *Figure 1*; and

95 *Figure 4* is a section on an enlarged scale along the line IV-IV of *Figure 1*.

Referring to the drawings, the preferred embodiment of stretcher 1 illustrated comprises a moulded plastics body 2 having an upper surface 3 which is dished to form a patient receiving recess 4 defined by a relatively flat central region 5 of the upper surface and relatively steeply inclined sides 6. When a patient is placed within the recess 4 the sides 6 provide all round protection to the patient against both the possibility that the patient will slide off the stretcher, and against accidental blows from objects against which the stretcher may strike.

The lower surface 6 of the stretcher is provided with skids 7 which incorporate wheels 8. The wheels 8 facilitate dragging the stretcher over relatively smooth surfaces, whilst the skids 7 enable the stretcher to be dragged over obstructions, down stairs, etc. The structure of the body is sufficiently rigid to protect the patient from contact with objects struck by the stretcher as it is being dragged or carried, and in particular the lower surface of the stretcher is able to protect the patient against contact with objects over which the stretcher is dragged.

The stretcher is formed by two skins 9, 10 of moulded plastics material, preferably moulded polyethylene. The skins are united along the upper edge 11 of the stretcher to form a sealed air space 12 which gives buoyancy to the stretcher enabling the stretcher to float in water. The skins make contact via a plurality of kiss points 13. This arrangement provides some flexibility to the stretcher, and in particular gives some protection to the patient against excessive jarring.

The body of the stretcher is pierced by a plurality of openings 14 each of which enables the adjacent per-

ipheral portion of the body to be used as a grab handle 15. In the preferred embodiment of the invention twelve such grab handles are provided. Not only are the grab handles useful for lifting and dragging the stretcher, but they may be used to secure straps for holding a patient on the stretcher, and drag lines to enable to stretcher to be dragged along the floor.

The generally dishd shape of the body enables the stretchers to be stacked one inside another, thereby facilitating storage thereof.

#### CLAIMS

1. A stretcher comprising a plastics body the upper surface of which is dishd to form a patient receiving recess, and the lower surface of which is provided with ground engaging means on which the stretcher loaded with a patient may be dragged along the ground, the body being sufficiently rigid to protect the patient from contact with any object struck by the stretcher as it is being dragged or carried, and being provided with openings whereby peripheral portions of the body form grab handles by means of which the stretcher may be lifted, carried or dragged.
2. A stretcher according to claim 1, wherein the ground engaging means comprise skids.
3. A stretcher according to claim 1 or claim 2 wherein the ground engaging means comprise wheels.
4. A stretcher according to any preceding claim wherein the body comprises spaced apart upper and lower skins, the skins being sealed together to form a sealed void therebetween.
5. A stretcher according to claim 4 wherein the upper and lower skins make contact by way of a plurality of kiss points located in the base of the stretcher.
6. A stretcher according to any preceding claim wherein drag lines and/or patient securing straps are secured to at least some of the grab handles.
7. A stretcher substantially as herein described with reference to the accompanying drawing.